

**TEST SYSTEMS AND SENSORS
FOR DETECTING MOLECULAR BINDING EVENTS**

ABSTRACT OF THE DISCLOSURE

A bio-assay test system includes a test fixture, a measurement system, and a
5 computer. The test fixture includes a bio-assay device having a signal path and a retaining
structure configured to place a sample containing molecular structures in electromagnetic
communication with the signal path. The measurement system is configured to transmit test
signals to and to receive test signals from the signal path at one or more predefined
frequencies. The computer is configured to control the transmission and reception of the test
10 signals to and from the measurement system.

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